Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the above-identified application:

Listing of Claims:

Claims 4-39 have been withdrawn without prejudice or disclaimer.

1 (Currently amended). A method of identifying CpG islands which are preferentially methylated in malignant cells contained within a tumor or neoplasm, comprising:

a) digesting genomic DNA obtained from the malignant cells with an infrequently-cutting, methylation-sensitive, restriction enzyme to provide a set of malignant cell restriction fragments;

b) digesting genomic DNA obtained from non-malignant, control cells with an infrequently-cutting, methylation-sensitive, restriction enzyme to provide a set of control cell restriction fragments;

c) attaching a detectable label to the ends of the malignant cell restriction fragments and the control restriction fragments;

d) digesting the labeled malignant cell and control cell restriction fragments with a second restriction enzyme;

e) separating the labeled malignant cell restriction fragments and the labeled control cell restriction fragments, wherein the malignant cell restriction fragments and the control cell restriction fragments are separated by electrophoresis on two different gels;

f) digesting the restriction fragments in each of said gels with a third restriction enzyme;

g) electrophoresing the restriction fragments in each of said gels in a direction perpendicular to the first direction to provide a first pattern of detectable malignant cell restriction fragments and a second pattern of detectable control cell restriction fragments; and

h) comparing the first pattern to the second pattern to identify diagnostic control cell restriction fragments in said second pattern which are absent or exhibit a decreased intensity in the first pattern, wherein said diagnostic control cell restriction fragments comprise a CpG island that is unmethylated in the DNA of the control cells and methylated in the DNA of the malignant cells,

wherein the tumor or neoplasm is selected from the group: ~~breast~~, colon, glioma, non-squamous cell head and neck, lung, and non-medulloblastoma primitive neuroectodermal tumors (PNET) ~~and testicle~~.

2 (Original). The method of claim 1 further comprising the step of determining the sequence of at least a portion of a diagnostic control cell restriction fragment, wherein said portion is located at or near an end of the fragment.

3 (Original). The method of claim 1 further comprising the step of obtaining a clone from a DNA library which comprises a diagnostic control cell restriction fragment.

40 (Previously added). The method of claim 1 wherein the tumor or neoplasm: ~~from breast is adenocarcinoma, lobular carcinoma or ductal carcinoma;~~ from colon is stage I, II, III or IV as classified according to the American Joint Committee on Cancer staging~~; from head and neck is not squamous cell carcinoma~~; and from PNET is ~~medulloblastoma or~~ supratentorial PNET~~; and from testicle is seminoma or nonseminoma~~.

41 (Previously added). The method of claim 1 wherein the tumor or neoplasm is a primary tumor or neoplasm.